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(71) Applicant

Anthony John Cuthbert  
Tony Cuthbert Ltd, 57 Rupert Street, London,  
W1V 7HN, United Kingdom

(56) Documents cited  
GB 2235347 A EP 0171829 A2

(72) Inventor

Anthony John Cuthbert

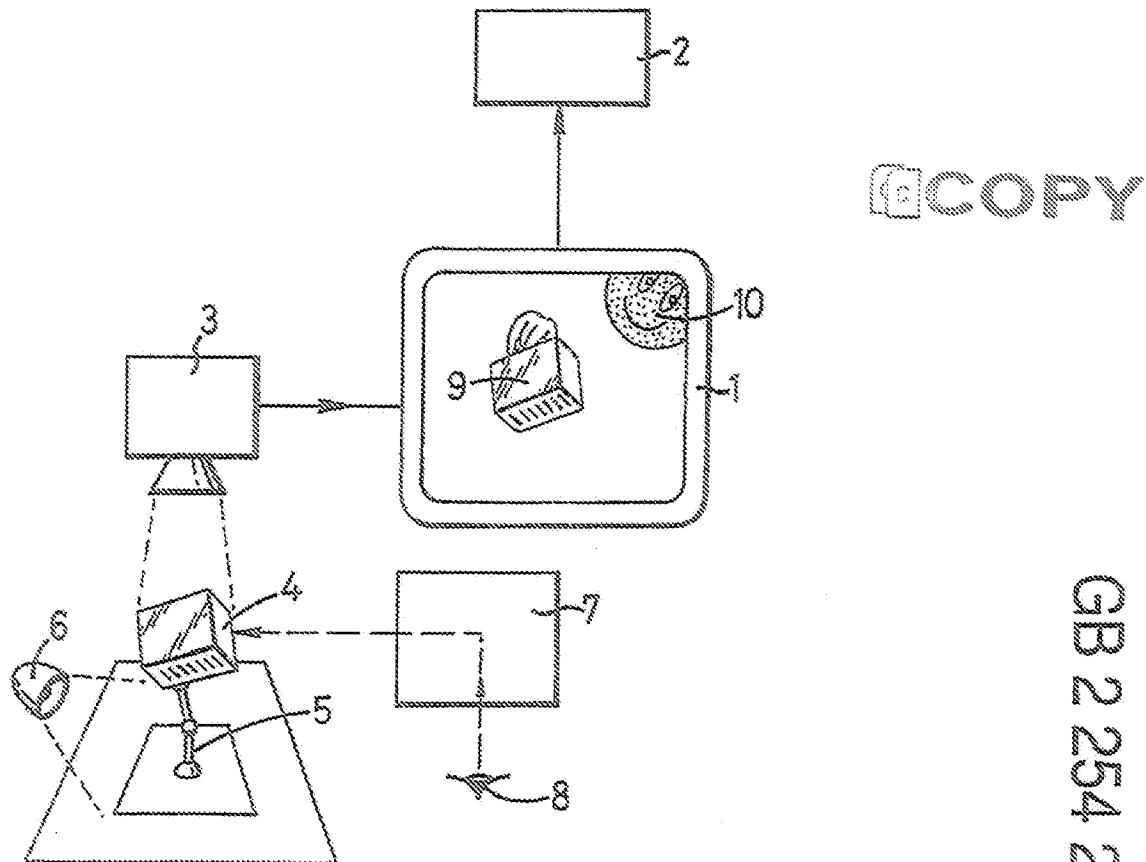
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(74) Agent and/or Address for Service

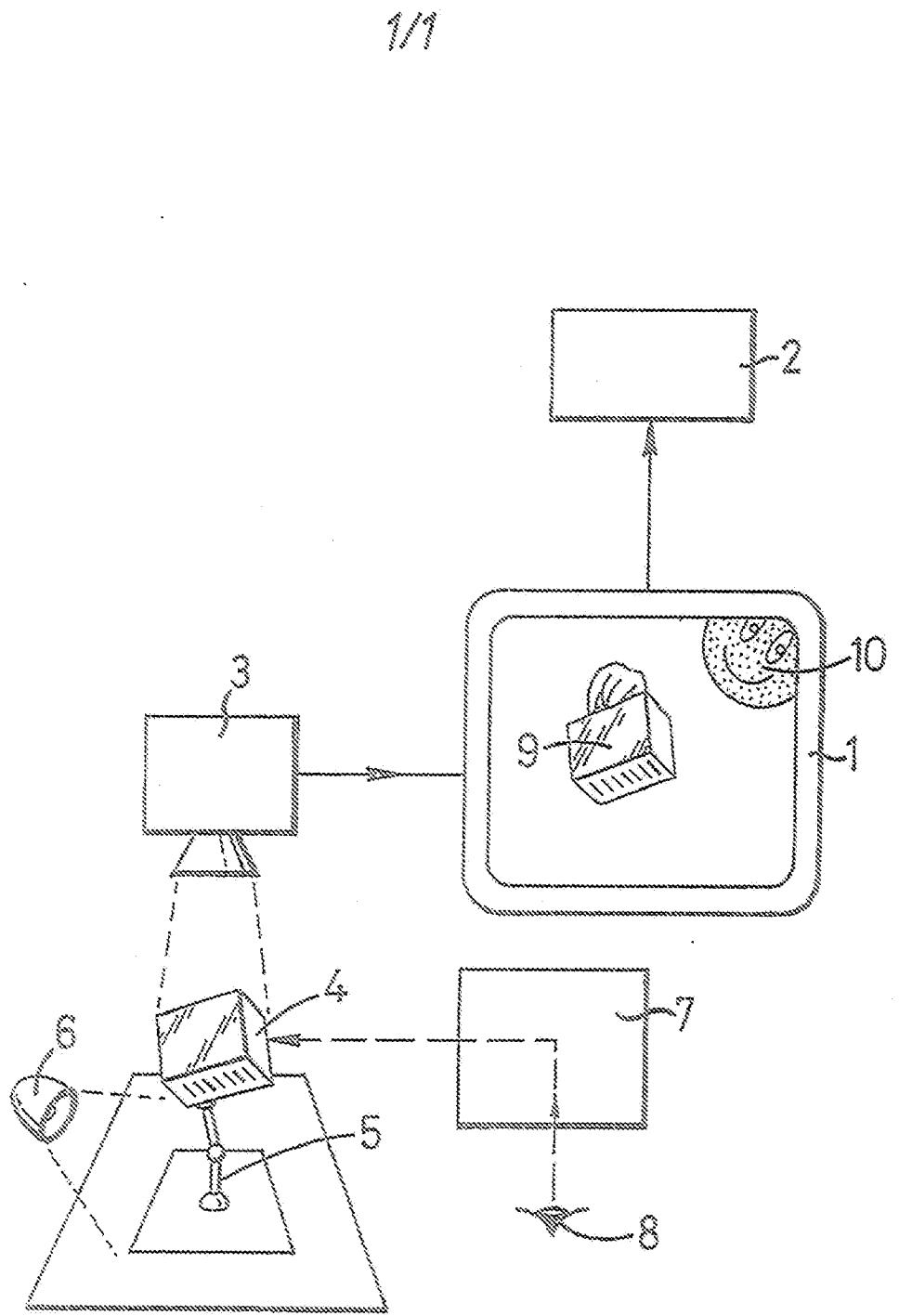
Stebbing & Co  
45 Lancaster Mews, Lancaster Gate, London,  
W2 3QQ, United Kingdom

(54) Video signal editor

(57) A method of mixing two video signals whereby a first video frame signal, forming the background and input via a freeze frame recorder, is mixed with a second video signal and subsequently recorded. The second video signal image is suitably positioned onto the frozen background video signal. It is used for example when a product having an English name needs to be advertised in a different country e.g. France, an image corresponding to the product and having the French name is superimposed onto the original.



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The present invention relates to a visual image modifier, and more particularly to a method of inserting a secondary image into an on-line televisual editing system.

In the production of filmed advertisements, it is common to produce a first addition in a language such as English for a main market. The problem then remains to satisfactorily convert the film or advertisement into another language such as French or German for other markets. Whereas the language of the production can be readily changed, it is often necessary to substitute in the film items such as product packaging which are more appropriate to the society of the language concerned. For example in an advertising situation it is often necessary to substitute one language version of packaging for another particularized for a specific market which may for example bear art work peculiar to the country concerned.

In the past such a situation would have required the production of discrete sections of films for particular markets, and this is of course expensive.

More recently electronic means have been employed in which a particular item, for example a package, is filmed from all six sides to provide an image input in respect of each view. This image is then electronically reconstituted to provide an apparently three dimensional view of the package which may then be electronically manipulated on a screen. This image is then utilised to insert the so produced image into an original film or advertisement by electronically superimposing an image of the new form of packaging upon the old image on a frame by frame basis and re-recording.

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This process is effective but is subject to the electronic constraints of the system such as the unrealistic appearance of an electronically generated image. The main drawback is however, that of expense. The electronic facility, which must be used for a considerable period because the substitution is done on a frame by frame basis using two electronic systems, is subject to high hourly charges in order to recover the very substantial initial cost of the systems.

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The present invention provides a much cheaper way of achieving the same end using existing technology and equipment usually found in a video editing studio although not for use in the way that is now suggested.

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According to the present invention therefore there is provided a method of inserting a secondary image into an on-line televisual editing system comprising:- a video editing system including a freeze frame facility and a plurality of monitors,,

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a recording means to record edited material, and a caption camera; characterized in that the secondary image is formed from a stationary object in a predetermined orientation and in that said secondary image is superimposed at a desired position on each of one or more individual frames and is subsequently recorded in its edited form.

The stationary object is preferably supported on a universal joint and may be associated with moveable lighting to allow visual matching of the light effects on the frozen frame.

The stationary object, preferably disposed on the universal joint, may be viewed in a mirror so that movement of the object, when viewed in the mirror, mimics the equivalent movement of the image on a monitor screen.

Superimposition of the new image onto an existing frame often results in peripheral portions of ancillary images being obliterated. These can, where necessary, be reformed by utilising standard technology such as that represented by the "Harry" or "paintbox" technology.

The present invention will now be described by way of illustration only with reference to the accompanying drawings which shows in diagrammatic form an arrangement in accordance with the present invention.

An on-line televisual editing system comprising at least one monitor (1) is provided as part of normal studio facilities for editing video film and is well known in the art. This on-line editing system comprises a frame by frame editing facility and means whereby each frame can be digitally selected for editing purposes. By use of this editing system changes effected to the visual image on each frame can be immediately re-recorded in their final form on the recording facility (2).

It is known in the art also to provide a caption camera (3) which is normally provided to insert captions into a finished film.

In accordance to the present invention the caption camera is relocated to film an object to be inserted into a pre-recorded film disposed in the editing

facility. In the present instance a standard size package (4) is supported on a universal joint (5) adjacent a lighting system (6) which is infinitely variable to provide illumination as required. The system also optionally includes a mirror (7) which may be viewed by an eye (8) from a remote point.

5       In use a frame of a pre-recorded image (10) is selected on the editing facility. This is shown in the monitor (1) with the originally filmed package shown centrally of this screen in the accompanying drawing. A new package (4) is supported on the universal joint (5) and the lighting system (6) adjusted such that the illumination, shade, and other parameters are exactly matched to  
10      that originally shown in the pre-recorded film. This process may be viewed in the mirror (7) whereby movements of the package (4) are shown in the opposite sense to accord with the image appearing on the screen (1); the use of a mirror allows the operator (8) to move the package (4) and view it in the sense in which it appears on the monitor (1).

15      The caption camera controls may then be operated in the usual way to translocate the image received on to the monitor screen (1) such that the image of the package (4) provided by the caption camera (3) is superimposed upon the prerecorded image (10) so that it precisely matches the package originally shown in the pre-recorded film. Lighting (6) and the orientation of  
20      the universal joint (5) may then be minutely adjusted manually so as to produce on the monitor screen a superimposed image (9) which is in all respects satisfactory. The image thus compositely produced can be then rerecorded by the recording facility (2) and the prerecorded image (10) can be moved by one or more frames for the process to be repeated.

In the arrangement shown, the hand of the cartoon or live action character slightly overlies the superimposed image (9). The fingertips of this character are obliterated by the superimposed image (9) in the method of the invention. These may reconstituted electronically by using the "Harry" and "paint box" systems or by suitable visual additions to the package (4) in a manual sense.

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It will be appreciated that whereas package (4) and the original recorded package on the prerecorded image (10) have in this instance identical sizes. This need not be the case. Packages or other shapes in two or three dimensions can be readily inserted by this method into a prerecorded frame and recorded on a single or multiple frame. Accordingly by use of the present invention it is possible to update and amend existing pre-recorded film using available technology relatively cheaply.

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The invention therefore provides a method of inserting a secondary image into an on-line televisual editing system and to a televisual editing system constructed and arranged to perform the inventive method.

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## CLAIMS

1. A method of inserting a secondary image into an on-line televisual editing system comprising:  
5 a video editing system including a freeze framed facility and a plurality of monitors,  
a recording means to record edited material, and a caption camera; characterised in that the secondary image is formed from a stationary object in a pre-determined orientation, said secondary image being superimposed at a desired position on each of one or more individual frames and subsequently recorded in its edited form.  
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2. A method according to claim 1 wherein the object is supported on a universal joint and associated with a moveable lighting facility to allow visual matching of the lighting on said freeze frame.
- 15 3. A method according to either of claims 1 or 2 wherein the object is viewed in a mirror so that movement of the object provides an image in an opposite sense to match the movement on a monitor screen.
4. A method according to any preceding claim wherein an electronic graphics system is utilised to further modify the secondary image after superimposition.  
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5. An on-line televisual editing system constructed and arranged to perform the method according to anyone of claims 1 to 4.

6. A method of inserting a secondary image into on-line televisual editing system substantially set forth with reference to, and/or illustrated in, the accompanying drawing.

Examiner's report to the Comptroller under  
Section 17 (The Search Report)

Application number

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## Relevant Technical fields

(i) UK CI (Edition X ) H4F - FGG, FGH, PGH, PGS, FGT

(ii) Int CL (Edition S ) H04N - 5/262, 5/265, 5/272,  
5/275, 5/278

Search Examiner

D H JONES

## Databases (see over)

(i) UK Patent Office

(ii)

Date of Search

9 JUNE 1992

## Documents considered relevant following a search in respect of claims

1 TO 6

Category (see over)	Identify of document and relevant passages	Relevant to claim(s)
A	EP 0171829 A2 (QUANTEL) see figure 2	
A	GB 2235347 A (BARBER) - see Figure 1	

Category	Identity of document and relevant passages	Relevant to claim(s)

#### Categories of documents

X: Document indicating lack of novelty or of inventive step.

Y: Document indicating lack of inventive step if combined with one or more other documents of the same category.

A: Document indicating technological background and/or state of the art.

P: Document published on or after the declared priority date but before the filing date of the present application.

E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

&: Member of the same patent family, corresponding document.

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